In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A test structure, comprising ~~having~~: a first member having: a roughly rectangular shape; a first width dimension; and a first length dimension that is greater than the first width dimension; and a second member having: a roughly rectangular shape; a second width dimension; and a second length dimension that is greater than the second width dimension; the second member being combined with the first member to form a roughly symmetrical cross-shaped test structure.

2. (Original) The structure of claim 1, wherein: the first length dimension of the first member is about twice as great as the first width dimension of the first member; and the second length dimension of the second member is about twice as great as the second width dimension of the second member.

3. (Original) The structure of claim 1, wherein the cross-shaped test structure is comprised of copper.

4. (Original) The structure of claim 1, wherein the cross-shaped test structure has a thickness of from about 5000 to 10,000 .ANG..

5. (Original) The structure of claim 1, wherein the cross-shaped test structure 100 has a thickness of about 5000 .ANG..

6. (Original) The structure of claim 1, wherein the cross-shaped test structure is formed on a test wafer or a test site within a product wafer.

7. (Original) The structure of claim 1, wherein the cross-shaped test structure is formed on a test wafer and the cross-shaped test structure occupies an area of from about 0.4 by 0.4 .mu.m on the test wafer.

8. (Original) The structure of claim 1, wherein the cross-shaped test structure is formed on a test wafer and the cross-shaped test structure occupies an area of from about 1.0 by 1.0 .mu.m on the test wafer.

9. (Original) The structure of claim 1, further including: a first and second metal lines each having opposing ends; the first and second metal lines being joined at two of their respective opposing ends at about a 90.degree. angle to form an intersection; and a via extending from the first and second metal line intersection to the approximate center of the cross-shaped test structure.

10. (Original) The structure of claim 1, further including: a first and second metal lines each having opposing ends; the first and second metal lines being joined at two of their respective opposing ends at about a 90.degree. angle to form an intersection; the first and second metal lines each having a thickness of from about 5000 to 10,000 .ANG.; and a via extending from the first and second metal line intersection to the approximate center of the cross-shaped test structure; the via having a length of from about 5000 to 10,000 .ANG..

11. (Original) The structure of claim 1, further including: a first and second copper lines each having opposing ends; the first and second copper lines being joined at two of their respective opposing ends at about a 90.degree. angle to form an intersection; the first and second copper lines each having a thickness of about 5000 .ANG.; and a copper via extending from the first and second copper line intersection to the approximate center of the cross-shaped test structure; the copper via having a length of from about 5000 .ANG..

12. (Original) The structure of claim 1, wherein the cross-shaped test structure includes a center and stress gradients surrounding the center.

13. (Original) The structure of claim 1, wherein the cross-shaped test structure includes a center and stress gradients exerting maximum stress upon the center.

14. (Original) The structure of claim 1, wherein the test structure is formed within a dielectric layer.

15. (Original) A test structure, having: a first rectangular member having a first width dimension; and a first length dimension that is about twice as great as the first width dimension; and a second rectangular member having a second width dimension and a second length dimension that is about twice as great as the second width dimension; combined with the first rectangular member to form a symmetrical cross-shaped test structure.

16. (Original) The structure of claim 15, wherein the cross-shaped test structure is comprised of copper.

17. (Original) The structure of claim 15, wherein the cross-shaped test structure has a thickness of from about 5000 to 10,000 .ANG..

18. (Original) The structure of claim 15, wherein the cross-shaped test structure 100 has a thickness of about 5000 .ANG..

19. (Original) The structure of claim 15, wherein the cross-shaped test structure is formed on a test wafer or a test site within a product wafer.

20. (Original) The structure of claim 15, wherein the cross-shaped test structure is formed on a test wafer and the cross-shaped test structure occupies an area of from about 0.4 by 0.4 .mu.m on the test wafer.

21. (Original) The structure of claim 15, wherein the cross-shaped test structure is formed on a test wafer and the cross-shaped test structure occupies an area of from about 1.0 by 1.0 .mu.m on the test wafer.

22. (Original) The structure of claim 15, further including: a first and second metal lines each having opposing ends; the first and second metal lines being joined at two of their respective opposing ends at about a 90.degree. angle to form an intersection; and a via extending from the first and second metal line intersection to the approximate center of the cross-shaped test structure.

23. (Original) The structure of claim 15, further including: a first and second metal lines each having opposing ends; the first and second metal lines being joined at two of their respective opposing ends at about a 90.degree. angle to form an intersection; the first and second metal lines each having a thickness of from about 5000 to 10,000 .ANG.; and a via extending from the first and second metal line intersection to the approximate center of the cross-shaped test structure; the via having a length of from about 5000 to 10,000 .ANG..

24. (Original) The structure of claim 15, further including: a first and second copper lines each having opposing ends; the first and second copper lines being joined at two of their respective opposing ends at about a 90.degree. angle to form an intersection; the first and second copper lines each having a thickness of about 5000 .ANG.; and a copper via extending from the first and second copper line intersection to the approximate center of the cross-shaped test structure; the copper via having a length of from about 5000 .ANG..

25. (Original) The structure of claim 15, wherein the cross-shaped test structure includes a center and stress gradients surrounding the center.

26. (Original) The structure of claim 15, wherein the cross-shaped test structure includes a center and stress gradients exerting maximum stress upon the center.

27. (Original) The structure of claim 15, wherein the test structure is formed within a dielectric layer.

28-32. (Canceled)

33. (New) A method of testing for voids utilizing a test structure as claimed in claim 1, wherein the method comprises:

providing the test structure;

providing a roughly right-angle metal line structure connected to the test structure by a via;

testing the resistance of the test structure, right-angle metal line structure and via a first time;

baking the test structure, right-angle metal line structure and via; and

testing the resistance of the test structure, right-angle metal line structure and via a second time and comparing the first resistance test to the second resistance test.

34. (New) The method of claim 33, wherein the roughly cross-shaped test structure, right-angle metal line structure and via are baked at a temperature of from about 150 to 200 °C for from greater than about 0 to 168 hours.

35. (New) The method of claim 33, wherein the roughly cross-shaped test structure, right-angle metal line structure and via are baked at a temperature of from about 150 to 200 °C for about 168 hours.

36. (New) A method of testing for voids utilizing a test structure as claimed in claim 15, wherein the method comprises:

providing the test structure;

providing a roughly right-angle metal line structure connected to the test structure by a via;

testing the resistance of the test structure, right-angle metal line structure and via a first time;

baking the test structure, right-angle metal line structure and via at a temperature of from about 150 to 200°C for from greater than about 0 to 168 hours; and

testing the resistance of the test structure, right-angle metal line structure and via a second time and comparing the first resistance test to the second resistance test.

37. (New) The method of claim 36, wherein the roughly cross-shaped test structure, right-angle metal line structure and via are baked at a temperature of from about 150 to 200 °C for about 168 hours.